

AMENDMENTS TO THE CLAIMS

This listing of claims supercedes all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Original): An intake air control apparatus for an engine comprising:

a shaft;

a throttle valve fixedly secured to said shaft for adjusting the degree of opening in an intake passage through a rotational angle thereof;

a permanent magnet provided on an end portion of said shaft with its N pole and S pole being positioned in a diametral direction thereof; and

a rotational angle detection sensor having a magnetoresistive element disposed in a spaced parallel relation with respect to said permanent magnet for detecting a change in the azimuth of magnetic flux of said permanent magnet thereby to sense a rotational angle of said throttle valve.

2. (original): An intake air control apparatus for an engine comprising:

a shaft;

a throttle valve fixedly secured to said shaft for adjusting the degree of opening in an intake passage through a rotational angle thereof;

a first permanent magnet provided on an outer periphery of one end of said shaft with its N pole and S pole being positioned along an axis of said shaft;

a second permanent magnet provided on the outer periphery of the one end of said shaft in opposition to said first permanent magnet with its N pole and S pole being positioned along the axis of said shaft;

a rotational angle detection sensor having a magnetoresistive element disposed in a magnetic path formed by said first permanent magnet and said second permanent magnet in a spaced relation with respect to said shaft for detecting a change in the azimuth of magnetic flux of said permanent magnet thereby to sense a rotational angle of said throttle valve.

3. (original): The intake air control apparatus for an engine as set forth in claim 2, wherein a gear wheel formed integrally with a plate fixedly secured to said shaft is mounted on an end portion of said shaft for transmitting torque from a drive motor to said shaft, and said first permanent magnet and said second permanent magnet are mounted on said plate.

4. (original): The intake air control apparatus for an engine as set forth in claim 1, wherein said rotational angle detection sensor is disposed offset toward an N pole side or an S pole side.

5. (original): The intake air control apparatus for an engine as set forth in claim 1, wherein a body having said intake passage and accommodating therein said shaft and said throttle valve is closed by a cover, and said rotational angle detection sensor is integrally formed with said cover by insert molding.

Please add the following new claims:

6. (new): The air intake control apparatus for an engine as set forth in claim 1, wherein a central axis of the permanent magnet is offset from a central axis of the shaft.

7. (new): The air intake control apparatus for an engine as set forth in claim 1, wherein a central axis of the permanent magnet is offset from a central axis of the sensor.